Australian Society for Limnology Inc.

NEWSLETTER

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AUSTRALIAN SOCIETY FOR LIMNOLOGY INC.

The Australian Society for Limnology Inc. (ASL) is an association of over 500 people with professional or amateur interests related to Australian inland waters. Since its inception in 1961, the society has played an important role in fostering limnology in this country. The ASL promotes liaison between limnologists in academic, government and private institutions and has a vested interest in the conservation of aquatic and related resources. Annual conferences are held near centres of limnological interest, and the programme includes scientific sessions, field excursions and social activities.

The ASL regularly produces a newsletter with notes on limnological activities, articles of interest, book reviews and announcements of upcoming events likely to be of interest to Members.

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Membership Infomation and a list of the Regional Executive Officers can be found at the back of this Newsletter

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Material for publication in the March 1996 Issue of the Newsletter should be sent to the Editor (see back pages) before **31st March 1996**.

Long articles should be forwarded as unformatted text on a disk or to the editor via email.

EDITORIAL

MERRY CHRISTMAS and HAPPY NEW YEAR

This, the last newsletter for 1995, contains lots of Prattlebut from Australia and Papua New Guinea. The Articles section contains updated information on the 1996 Ramsar Convention to be held in Brisbane, and the News from FASTS section has information about a series of workshops on presentation skills to be run specifically for scientists. I have reprinted Ian Campbell's report on SIL 1995 owing to the unexplained disappearance of the second half of the report in the last issue (*and it was SIL 1995 not SIL 1994*!!)

With the first issue of the Newsletter in 1996 (March Issue) we plan to add a new section (see Presidents Report). The section will be called "Issues in Limnology" and it is here that all ASL members can raise in a public arena limnological issues they view as important. Issues can range from local to national or international. An article for the "Issues" section should include background information and a contact name, address and phone number (without these it will not be published). The "Issues in Limnology" section from each newsletter will be copied and sent by the President to media contacts. This is your chance to raise issues that concern you!! Lets hope I am swamped by responses in the next three months.

DON'T FORGET TO COMPLETE THE ACF QUESTIONNAIRE IN THE MIDDLE OF THE NEWSLETTER AND SEND IT BACK **BEFORE** 9 FEBRUARY 1996.

DEADLINES FOR THE NEWSLETTER IN 1996

The following are the deadlines for ASL Newsletter Volume 34

Volume	Deadline
Volume 34	
March 1996, *No 1*	31st March 1996
June 1996, *No 2*	30th June 1996
September 1996, *No.3*	30th September 1996
December 1996, *No 4*	31st December 1996

FROM THE PRESIDENT

There are two topics to report for this issue of the Newsletter. First, there are some matters that have progressed since the September Newsletter, that you should all know about. These include:

- Minister Faulkner has given approval for ASL to be admitted as an official observer delegation to the forthcoming Ramsar conference in Brisbane. Gillian Dunkerley is ASL's representative.

- ASL has also applied for a formal representation on the National Wetlands Advisory Committee; no news on that front yet.

- The wetland working group is making great progress with its formulation of a document outlining ASL's perspective on the condition of Australia's wetlands, major threats they face, their research needs and management requirements. Pierre Horwitz has kindly agreed to be the coordinator for this group: feed any ideas you have to him, or to the member closest to you in your state. These are: Michelle Barson (ACT), Jane Chambers and Jenny Davis (WA), Deb Nias (VIC), Jane Roberts (NSW) and Peter Schulz (SA). Tropical-types might like to send things to Pierre directly.

- ASL's running of the LWRRDC-sponsored Biomanipulation Workshop seems to progress well. We have a working group (Mick Bales, Vlad Matveev, Marg Brock, Fran Sheldon, Mike Burch, Monika Muschal, and myself) organising the workshop. LWRRDC are current preparing the contract for ASL to sign; about $25,000 is involved, which will support a few overseas talkers who will also attend the 1996 ASL scientific congress in Berri. The only problem is that Mick Bales has changed jobs and been out-of-contact for a while.... Mick make contact back with base; we need you now!!

- Gerry Closs has worked up a beaut and consistent assessment scheme for judging student talks and posters at the Berri conference.

- Richard Marchant and I are redesigning the ASL brochure, as part of a vigorous membership drive. The pale blue one we current use dates from the early 1980s, and it shows. Richard and I will have a flash new brochure ready for handing out at Intercol, Ramsar, etc, etc.

- Marg Hart and I have modified the ASL Welcome letter we send off to new members. It now gives contact numbers of the Executive etc.

- Last of all, you'll find enclosed a questionnaire from the ACF on the state of the Murray-Darling Basin. Can you please, please, please fill this out to the best of your ability, and send it off to the ACF. ASL is acting as a "information conduit" in this interaction with the ACF. Do any members have a problem with us acting in this capacity?

Now onto the second matter. The Executive is undecided as to whether the ASL should become directly involved in conservation/natural- resource issues as a lobby group, or whether it should remain a scientific society with professional links. If there is an issue that is of deep concern to an individual member and/or probably to ASL as a whole (e.g., water diversions and irrigation) should the Society only act as a provider of scientific information at the government level, or should it act as a lobbyist organisation as well? If the latter, how do we distinguish between bona fide general concerns and individuals' hobby horses? Should ASL make regular press releases condemning or applauding a particular action? Should the Executive act (unilaterally?) on the members' behalf, or should things wait until the next AGM for the membership to vote on particular issues and actions? By then, of course, all our efforts might be decidedly old hat.

One option, that Fran Sheldon proposed, was for the Newsletter to have a special section on Issues. This section would be a venue for members to voice their concerns about specific proposals, developments, etc. Additional copies of this section would be printed and sent to major media outlets: TV stations, city and major rural newspapers, etc, etc. ASL would thereby act as a broker of information, but not necessarily have to give its imprimatur to any ideas or concerns expressed in the Issues section. And, of course, any contributor would have to provide 'phone and fax details so hordes from the media could contact them and not your friendly Executive members!

We need your ideas: contact your Executive directly and/or express your views in the next Newsletter.

El Presidente,

Paul I. Boon

One last thing folks: my email address will (probably) change to paul=boon@vut.edu.au in the next few weeks, as VUT "reforms" (a nice Victorian word) its computer network.

PRATTLEBUT, SCUMOUR AND RUTTLE

WESTERN AUSTRALIA

Murdoch University

Environmental Science
from: Jane Chambers

Jane Chambers and **Jenny Lidston** are still busy trying to save the Peel-Harvey Estuary from the Peel Main Drain. This summer they are putting in a wetland filter at a sheep holding yard and are now trying for the big time: getting involved in a project to revegetate 6.5 km of creek/drain which also receives runoff from a sheep holding yard. Interest in wetland filters is high, with a recent short course here at Murdoch, where enthusiastic participants installed a "reed bed filter" at our Environmental Technology Park, to treat aquaculture effluent.

Aquatic Ecosystems Research
from: Phil Papas

The dynamic nature of the Aquatic Ecosystems Research group continues with four new faces. **Tressyln Smith**, **Melita Pennifold** and **Sabarrudin Tjokrokusumo** are battling through their respective Honours and PhD projects. **Tressyln** is examining Avon River macroinvertebrates and **Melita** the effects of bivalves on water filtration and bioturbation of waters of the Swan River Estuary. **Sabaruddin** is looking at the effects of vegetation and substratum type on invertebrate populations in wetland ecosystems. **Frederick Bouckaert** is enjoying post Honours life after recently submiting his Honours Thesis. **Frederick** investigated near-bed flow regimes with the use of an Acoustic Doppler Velocimeter (ADV).

Kerry Trayler has been busy the last two months designing and implementing an artifical stream project which she will be utilising to examine the effect of varying sediment loads on organic matter decomposition. **Kerry** has aquired an aversion to leaf-packs in the process!

Declan Morgan and **Lorna Charlton** are enjoying the festive distractions while they contemplate PhD completion.

Phil Papas and **Brian Morgan** have have recently completed round four of Monitoring River Health Intiative sampling. They have managed to avoid tropical cyclones, although march flies have prooved deadly.

Fish Research Group and Marine and Estuarine Research
from: Margaret Platell

Over the last year, the Fish Research Group, headed by **Ian Potter**, has been working on the fish communities and biology of fishes in both estuarine and marine waters of Western Australia. Both **Glenn Hyndes** and **Margaret Platell** have been making good progress in the understanding of the general biology, including age and growth, reproduction and diets of the marine prize angling fish King George Whiting. This work has been heavily reliant upon the contributions of recreational fishers, and some good results are now coming through. **Gavin Sarre**, now our longest running full-time PhD Student, is looking very closely at the general biology of the elusive Black Bream in the Swan River estuary, and is making comparisons of the growth and overall morphologies of Black Bream from different estuarine systems.

Comparisons of the fish communities in the Moore River estuary, north of Perth, and Leschenault Inlet in Bunbury, and the Blackwood River estuary near Augusta, on the south coast, have been completed as part of Honours programmes, and are currently being written up for publication. **Fiona Valesini**, who worked upon the fish of the Blackwood River estuary, is expected to join us at Murdoch in early March to work on one of our new projects. **David Tiivel**, who looked at the fish communities of the Leschenault Inlet, is now working at Curtin University and conducting postgraduate studies on the diatom fauna of south-western Australia. Our third Honours Student, **Glen Young**, who examined the fish fauna of the Moore River, has been employed by WA Fisheries working on the biology of tailor, and is now undertaking PhD studies of the fish communities and recruitment of various fish species in the Peel-Harvey estuary.

This year, we have received funding for two three-year projects from FRDC and the WA Estuarine Research Foundation. Our first project, which is studying the possible effects of the recent construction of the Dawesville Channel on the prawn, crab and fish fauna of the Peel-Harvey estuary near Mandurah, will be mainly carried out by **Simon de Lestang** and **Fiona Valesini**. **Glen Young** and **Alex Hesp** will be making direct comparisons of the fish communities with previous studies conducted by our research group in the early 1980's.

Our second new project, which is part of an overall collaborative study of the Swan River estuary, will examine the fish and macrobenthic invertebrate communities of the upper Swan River estuary, and to determine how they may be affected by the dinoflagellate blooms which are becoming increasingly common in the upper estuary. **Simon de Lestang** and **Fiona Valesini** are organising much of the field work for this project, and are also helping with the laboratory work. We have also acquired a new Masters student from Namibia, **Angie Kanandjembo**, and she is studying the fish fauna of the upper Swan River estuary and the dietary ecology of four fish species, the Black Bream, Yellow-tail Trumpeter, Wallace's Hardyhead and the Bridled Goby.

Freshwater research

Howard Gill is currently looking at the age and growth and diets of endemic larval fishes in the south-west of WA and has recently completed work on the autumn and spring spawning periods of *Pseudogobius olorum* in the Swan River estuary.

His most recently finished Honours student, **Simon Hambleton**, has been studying the effects of *Gambusia holbrooki* on the native freshwater fish of south-western Australia (in the RGC Wetlands Centre at Capel) in terms of patterns of co-occurrence, dietary interactions and the presence of agonistic behaviour. He is now employed by the Fish Research Group in order to further experimentally investigate agonistic behaviour of *Gambusia* towards native fish species.

David Morgan has recently completed a paper on the general biology of Balston's pygmy perch, *Nannatherina balstoni*, which has been published in the Journal of Fish Biology. He is now looking at various aspects of the biology of the Western Australian Salamanderfish, *Lepidogalaxias salamandroides*, as well as mapping the distribution of freshwater fish between Capel and Albany, which is funded by the Waterways Commission of WA.

The Lamprey Research Group, including **Ian Potter**, **Max Cake**, **David Macey** and **Lee Stonell** are busy working on the systematics of lampreys, as well as looking at the ecology, physiology and biochemistry of *Geotria australis*.

From: Frederick Bouckaert, Environmental Science, Murdoch University

Frederick Bouckaert has just completed his Honours on the characterisation of microflow regimes in freshwater streams with the use of an Acoustic Doppler Velocimeter under the supervision of Dr. **Jenny Davis**. This research topic was presented at the last ASL conference at Jenolan Caves. Currently he is looking for full-time (permanent or temporary) employment as a research assistant anywhere in Australia. He has a particular interest in possibilities showing up in Tasmania. He had some work experience with the Peel Inlet Management Authority, the Waterways Commision and Murdoch University in WA. His interests are freshwater flow regimes in relation to macroinvertebrates and management of streams and rivers. He can be contacted at Murdoch on (09) 360 6298 or at bouckaer@essun1.murdoch.edu.au or alternatively at home on (09) 314 1145.

PAPUA NEW GUINEA

From: Ian Roderick

Well, no-one would think it was the dry season in Tabubil. It's been bucketing down on a daily basis this year. This time last year we were in the middle of a dry spell that caused several floodplains and shallow lakes in the middle Fly River region to dry up, and the Fly River level to drop to such an extent that it was no longer navigable to shipping. No chance of that at the moment.

It's been quite a hectic 6 months since my last report. The major event up here was the hosting of the 5th Annual Meeting of the New Guinea Biological Society by Ok Tedi Mining Ltd. This mainly attracted participants from Papua New Guinea, however there was a strong contingent from Irian Jaya, as well as a few delegates from Australia, Fiji, America and France. Virtually all of the delegates were either currently working or conducting research in New Guinea, or have done so in the past. It was encouraging to see such a strong interest in biological research in New Guinea.

There was some intensive frog research conducted after the conference by **Steve Richards**, **Ross Alford** (both JCU), **Michael Cunningham** (UQ) and **David Bickford** (University of Miami). A few new records for the area and a new species were discovered. Additionally, some potentially new species of damselfly were collected, so it was another successful trip.

A follow up waterbird survey in the wet season was conducted in October by **Stuart Halse**, **Grant Pearson** and **Winston Kay** (all from CALM) in the middle Fly floodplain area using aerial and ground survey techniques.

Apart from the BioSoc meeting, we have mainly been involved with routine monitoring, so not much to report there. However, we now have a new Senior Biologist. Dr. **Stephen Swales** joined us in late September from the NSW Fisheries Department. He has had to hit the ground running as he arrived at the busiest time of the year. **Andrew Storey** has been back on two occasions since then to show him the ropes and to assist with the preparation of the Annual Report. **Boga Figa** has returned from Townsville where he has been studying for a Post-Graduate Diploma.

Hepi Krismas na gutpela Niu Yia I go long olgeta man na meri blong ASL, na wankain long olgeta pikinini blong yupela.

NEW SOUTH WALES

Department of Land and Water Conservation

from: John Graice

Since the last issue we have gone through some major changes in the Aquatic Ecosystems Monitoring Section. First of all we are now called just **Aquatic Ecosystem Section (AES)**, a little easier to remember isn't it. Also our Section Leader Dr **Mick Bales,** whom we reported had left our Section and taken a position as Research Co-ordinator within the Department, has now left the Department altogether. Mick has accepted a position with the Environment Protection Authority as Regional Manager of the South West Region based in Griffith. It is sad to see Mick go and he will be greatly missed both for his work skills and unique sense of humour. We would also like to wish Mick the very best with his new career and hope he will be in constant contact now that he has moved on to bigger and better things. Finally our little Section has been realigned within the Department from the Ecological Services Unit to be included within the **Water Quality Services Unit**. This move has been adopted to better service our clients and acknowledge the need for interactive management of water to incorporate physical, chemical, bacteriological and biological aspects of water management. What this now means is that our little Section does the same work we have always done with the same structure and scope but we now have a broader capability to offer water quality services. Overall the changes have helped us to re-group and shoulder the new challenges ahead.

Changes aside our Section has settled down after the Spring sampling and reporting frenzy to a more sedate pace. **Monika Muschal** is now acting in Micks old position of Senior Biologist as well as Project Managing the Nymboida and Biomanipulation studies, both of which are in there final stages and to be completed in the new year. **Andrew Brooks,** whom we reported was seconded to the Grafton Region, has now returned to assume his former role of Project Manager of the biomonitoring component of the Central and North Regions Water Quality Program(CNWRWQP). This subsequently meant that he was on the latest sampling trip to the Macquarie River only a few days upon returning to Parramatta (It's good to be the Project Manager). This phase of the Program involves an intensive macroinvertebrate and water quality sampling of eight sites along the Macquarie River upstream and adjacent to irrigated cotton farms, hopefully to provide more detailed and relevant information of the effect of these agricultural practices. **Meredith Royal** and **Michael Moroney** are currently on a field trip sampling the Pindari Dam Catchment for macroinvertebrates. Meredith has recently completed the final draft of the CNW biomonitoring report for the 1994/95 Irrigation Season. Michael has been busy keeping the Monitoring River Health Program in order as well as doing some work within the Branch on fish passages. **Doug Westhorpe** is writing up a report on a LWRRDC Sub-catchment study and hence staying out of mischief. **Renaye Cole** has been organising everyone to write quality assurance procedures as well as spending alot of time in the lab sorting

and identifying. **Juli Boddy** has been on holidays to Tasmania and apart from that has been busy with the Border Rivers biological survey and in the lab identifying bugs and beetles. **Ranjana Valecha** and myself are currently spending alot of time in the lab with the endless samples that have accumulated from the field trips.

To improve our identification skills with all orders of macroinvertebrates we recently held a two day workshop in which each expert identifier of a Family of Macroinvertebrates tutored all other members on how to identify all Orders to Family level. This workshop was very beneficial and should improve our efficiency at sorting and identifying macroinvertebrates.

Until next time, Merry Christmas and a Happy New Year to all from AES.

Murray-Darling Freshwater Research Centre

from: Jo Thompson and John Hawking

What's been happening at MDFRC since last time.....

John Hawking attended the Invertebrate Biodiversity and Conservation conference at Melbourne University, November 27-December 1, 1995 and gave a talk and an accompanying paper on 'The Conservation status of Dragonflies'. John, along with many other staff members also attended another conference 'Spatial and Temporal' which ran from 6-8 December, 1995.

Spatial and Temporal

Most attendees from the conference have been busy since identifying, counting and reminiscing about the Conference and an anonymous source reveals that J.H. was in good (usual) form and fell down the steps three times whilst leaving the banquet room at the Conference dinner. (There must have been something in the food!!!!!) J.H. also apparently suffered from total amnesia and when quizzed about the nightís events categorically denies a near collision with a very sturdy and well-built wooden picnic-table...

The food (??) also did not agree with our fellow-worker, **Garth Watson**, who apparently had some very strange groaning sounds emanating from his room that same night. Someone (a different anonymous source) mentioned that consumption of red wine is often at the bottom of such noises and could also explain the red stains on the wall, power points, etcetera found the following morning.

A BIG night seemed to be had by all with reports that a riot nearly broke out when fellow-worker, **Daryl Nielsen** (a well-known dancing and ABBA fan!), gate-crashed an adjoining Maths Conference.

All MDFRC staff who attended the conference (or at least a good proportion of them) were somehow involved in a movie-shoot when **Paul Humphries** spied a good friend who shoots movies (ie. a real photographer) in a flower shop. MDFRC staff, with stars in their eyes invaded the flower shop and took over the shoot. Perhaps one day.....(in their dreams!!!!!!!) *(Just a note for all ASL attendees to Paul's unfortunate slide show, we have received notice that his good friend has advised Paul on the correct type of film and techniques to produce COLOUR slides for future reference.)*

The rest of the staff who did not attend the conference were delighted with the peace and tranquillity, not to mention the kebab lunches and cakes, and look forward (especially Rosie and Jo) to conferences in the future.

Real news...

Dr **Russell Shiel** and **Jackie Dixon** have had the pleasure of working with Dr **John Green**, from the University of WAIKATO, New Zealand, for the past three and a half weeks, mostly associated with the ciliate Trichodina Epizoicon Boeclulla. Professor **David Patterson** from the University of Sydney has also been visiting and has been working on the heterotrophic flagellates in Ryanís Billabong. **Russ** is currently engrossed in vast numbers of plankton samples sent by IFRS Narrandera from the Paroo, Darling and other rivers and numerous samples from Chaffey Dam.

Birthday congratulations are extended from all our staff to **Terry Hillman**, who turned 21 again on the 22nd December, 1995 (in truth it was the thirty-fourth anniversary!!!). Belated birthday greetings will be gratefully accepted as will any donations of good quality beverages and fine foods.

Rod Oliver from our Algal Department, extends Christmas greetings and promises to include a brief report on the algal peoples work in the next issue. He may even include the story about the fish he caught on a recent trip with **Daryl Nielsen** and **John Green**. Anybody requiring expert tips on fly-fishing please contact **Rod Oliver**. (A message in the tea room reads: Tell us about the fish, Rod.(again).)

Chaffey Dam news and more...

Farewell was extended to **Glenn Linde**, who has since moved back to Melbourne, but not without leaving us with fond memories... .

> Like the day he and another nameless person from the algal lab (boat driver: **Damian Green**) attempted to collect samples from a very windy and stormy Chaffey dam. In order to collect their samples these brave biologists decided to tie up to a large floating buoy in the middle of the lake. Due to the wind , this was not an easy task without disturbing their samples, as every time they got close to the buoy the wind blew them away.

A faster approach was decided upon and **Glenn** decided that he would grab onto the buoy before they drifted away again. **Damian** however, took a faster approach than was agreed upon, **Glenn** grabbed the buoy and the boat kept going, the buoy tipped over leaving Glenn in the drink!!!! It took a further half an hour to rectify the buoy so that nobody would know! (*Thought we would put it in the newsletter, just so nobody would know.*)

Boating tip: When tying three boats up it is unwise to tie one boat to the shore (a rock) and then to tie the other two boats up to each other (ie. three boats in a line). Anyone requiring more information should consult the Algal Department in regard to the string of unmanned boats seen floating in the middle of Chaffey dam earlier in the year.

Sports comment:
In a recent game of golf, **Chris Knight**, **Mike Copland** and the visiting **John Green** were all reminded of the difficulties one may face by not appeasing the water-god in the correct and appropriate manner before negotiating a water hazard on the golf course. By neglecting to throw three balls each into the nearest water hazard and offer prayers to the water-god concerned, they each in turn lost a significant number of golf balls (in one case 5 balls , not mentioning any names Chris!) and not all the water hazards were on the golf course!!!!

A warm welcome is extended to our visiting vacation students who are working flat out in our macro-, micro-invertebrate and chemistry labs. A big Hi! to **Robyn Martin** (Uni of New England), **Natalie McEvoy** (Macquarie Uni) and **Simon Hamilton** (yet again!!) and more to come.

Being the festive season, A Christmas Tale:

How did the fairy get on the Christmas Tree?
Santa was flat out, He was so busy stuffing Christmas stockings, packing sacks and wrapping presents.
The elves had gone to lunch and were blind (and extremely drunk as well),
Mrs Santa Claus was out shopping again .
Santa was beside himself with orders and was getting redder and redder, Just then...
A/The fairy stuck its head around the corner and said to Santa:
"Santa, I've got this Christmas Tree,
What should I do with it?????"

To finish with something fishy...
Anyone wondering what the awful smell coming from the storeroom was, might be interested in asking **Luciano Serafini** how long it took before he remembered to remove the sardines from the bait nets????

In finishing, What's black and white and eats like a horse?
A zebra.

MERRY CHRISTMAS FROM US ALL AT MDFRC

Charles Sturt University

from: Michael Healey

After a hectic year of research and report writing at CSU, the new year heralds much of the same. **Alistar Robertson** has been successful in receiving an ARC large grant to study flood variability, nutrient exchanges and biological productivity of river-floodplain systems in the Barmah-Millewa Forests in south-western NSW. **David Lamb** and **Alistar** and have been awarded ARC small grant funding to further develop the airborne video system for large scale assessment of water quality in Australian inland rivers. **Robyn Watts** has also received ARC small grant funding to examine the population genetics of bony bream (connections between billabongs and river). **Pat Murray** is still sampling Trichoptera (including adults), however, rainfall and unseasonal cool air temperatures is producing low numbers of samples. Thesis writing is the order of the day for **Lorraine Hardwick** while **Alison King** has submitted her honours thesis and is anxiously awaiting her result.

University of New England

from: Michelle Casanova (temporarily)

We are in the throes of the pre-Christmas rush at UNE. Experiments to set up, parties to go to, presents to buy. And of course someone has to be here all through the break to keep things watered and measured! Its looking like a good season for the farmers with plenty of rain in the last few months. Some of our lagoons have water in them for the first time in years and others are still drying down in all the fine summer weather. Our prediction that they would all dry out this summer may not be fulfilled. **Margaret Brock** has been in for brief visits over the past few months, away on endangered species recovery workshops and wetlands workshops and other important things. When she's been here she has been busy reading the thesis chapters of **Geoff Smith** who is busy at home, and writing furiously and applying for jobs. **Geoff** has finished all his field work and hopes to be finished in the better half of 1996. **Michelle Casanova** has been moving house and organising experiments with **Jill Divola** and **Chris Cooper** over the past few months. **Annabel Douglas-Hill** has been helping out with computer work as well. The campus maintenance crew made life a little difficult by driving a backhoe into a set of experimental tanks. Lucky they weren't filled with water and experiments at the time. Two of the tanks were better as dog kennels than tanks after that, but are likely to be replaced in the near future. **Marg's** new honours student **Nunzio Knerr** started immediately after exams with a trip up to Kakadu to look at flood-plain wetland seed banks and is back now to finalise his experimental methods and timing. **Ann Heinrich**, an external honours student, is looking at animal and plant propagule banks in the Williams River wetlands under the supervision of **Margaret Brock** and **Andrew Boulton**. **Marg** and **Andrew** successfully completed the first year of teaching the Aquatic Ecology second year unit and **Marg** is looking

forward to teaching a third year unit on Aquatic Botany in 1996. I couldn't get any rumour, prattle or scuttlebut out of the lot up the hill at Ecosystem Management, perhaps they're all on holidays.

SOUTH AUSTRALIA

Australian Water Quality Centre (a business unit of the SA WATER Corporation) based at the Bolivar Laboratory

Monitoring River Health (from Chris Madden)

Sampling is finally over for **Peter Goonan** and **Chris Madden** with a last trip to Cooper Creek in mid-December. More creatures were found in the local rain pools than in the creek itself but the weather was nice! The second survey data is virtually all entered with only one rescue trip required from the now absent **Fran Sheldon** for computer assistance. A year of microscope work and data entry is the prospect to look forward to as the final 450 samples from surveys three and four are processed. Some sites will be missed, others not so; a good example is Jacob Creek, known as a fine wine label to most other limnologists, but regarded colloquially as a "piss-hole" to a certain local. We press on regardless and hope to get as good a QC report for other surveys as Mr **J. Hawking** gave us for the first one.

Aquatic Ecology Report (from Peter Schultz)

Vladimir Tsymbal MSc with experience in the former Soviet Union and on the Great Lakes has joined our group for four months to help with the increased workload. An investigation of the effect of herbicides, used to remove feral riparian vegetation, on macroinvertebrates has commenced. Additionally there is the prospect of two major catchment studies starting soon.

The artificial wetland on the Defence Department's Murray Bridge Army Range has achieved its design flow at last. We have been involved with the establishment of macrophytes with help from a few schools. Monitoring, both biological and chemical, continue with macroinvertebrate diversity gradually increasing although ammonia concentrations are higher than predicted in the final lagoon.

The joint SA WATER / DENR project monitoring all major rivers used for water harvesting in the Mt Lofty Ranges is drawing to an end with only one sampling trip remaining for the Onkaparinga River. We have started the data analysis and report writing stage. The need for environmental flows and the impact of using steams to transport large volumes of chlorinated water, from the Murray to storages and between reservoirs, is being investigated in each catchment. A smaller long term study will continue this investigation in one or two catchments.

University of Adelaide

Department of Zoology

River Murray Lab
from: Adrienne Burns

The lab is quiet over the Christmas break with **Lorenzo Vilizzi** and **Stuart Blanch** returning to their home towns. The Boss (**Keith**) is also away, recovering before another year. Congratulations to the honours students **Daria Schultz**, **Sue Botting** and **Rhubarb Galbreth**.

All collections for the Lock 8 flooding trial on the lower River Murray were completed late in November, but despite extensive flooding causing disruptions to controls, patterns in dissolved and particulate organic carbon seem to be promising, and Stu's sedges put on incredible growth after the unexpected inundation. We're anticipating a busy year with **Stuart**, **Lorenzo** and **Adrienne** plunging into thesis formation. Some new additions of honours and postgraduate students are expected, so we'll keep you posted for new and exciting projects.

Department of Botany

The Botany Department is in Deep Study Torpor over summer--while everything is quiet, the life signs are still ticking away. **Kerri Muller** is making the most of every swamp zephyr available as the hot weather and toiletary substrates make sewage ponds methane gas factories. She has left for Bool Lagoon with **Kay Morris**, to try out the latest photosynthesis monitoring technology...The OS100 Modulated Fluorimeter...which will measure C fixation in plants intact in situ in a natty woven grey bag. Up until now plant responses to a water regime gradient were measured with a metre rule and a spade.

Speaking of which, **Marcus Cooling** has turned the corner into the last year of his Ph.D. and analysing a time series of macrophyte reponses to a seasonal flood in Bool Lagoon. The results should fit in well with pond time series to give a picture of flooding constraints on plant development.

Get-out-of-town dang-hot technology reigns in the GGG lab with our own Flow Cytometer. Rather than clog up the Med Schools machine with algal scum, this machine comes to the scum. On loan from Becton Dickinson, the machine is a trial to see how useful the machines are to algal limnologists. If **Justin Brookes** and **Sean Geary** love it and get out 6 papers in two months, B&D will sell the box to every lab in the country and make Wads of Cash.

TASMANIA

from: Jean Jackson

Good gossip has been hard to come by lately in Tas - ASL members please send me (Jean) stuff, I know there are many of you that don't get included in the news and we would love to know what you're up to. At the University of Tasmania in Hobart, **Leon Barmuta** has returned from six months study leave in the US and hopefully will tell his own story about this. His student **Belinda Robson** has submitted her PhD thesis on habitat complexity and herbivory in streams and is awaiting results. **Peter Davies'** group has been flat out with sampling for his projects on the downstream effects of hydro schemes. This includes resampling via helicopter at the Gordon River Scientific Survey sites on the Gordon and tributaries, previously sampled before construction of the Gordon and Serpentine Dams (which flooded Lake Pedder). A sampling operation of military scale and precision was conducted in November, to be repeated in autumn. **Laurie Cook**, **Will Elvy**, **Nicki Mitchell** and occasionally **Jean Jackson** work with **Peter** on this and other projects.

At Inland Fisheries, **Dave Crook** has started a PhD, supervised by **Leon Barmuta** and **Andrew Sanger**, on the effects of swan poo on highland lakes. Carp surveys continue, and show variability in ease of detecting carp. Advise on poisoning with rotenone was sought from US expert **Jim Fait**. Work on the critically endangered Pedder galaxiid will continue this year thanks to money from World Heritage Area funding, with searches in streams to be conducted in low flow conditions (Feb-March). The Commission is currently under review.

NORTHERN TERRITORY

NT University

from: Michael Douglas

I (**Michael Douglas**) am currently back at Monash University finishing off the last bug id's and sorting and doing some analysis and writing for my PhD. Whilst in Melbourne I will be attending the Temporal and Spatial scaling conference before heading back to NTU in mid-feb.

NT Power and Water Authority

from: Simon Townsend,

The Top End climate is one of flood and drought, and this year the flood has started early with good early wet season rains. For the most part such an early season is not welcomed - as it shortens the preparation time for run-off studies and dry season sites no longer become accessible. Work aside, however, the overcast weather is welcomed as it is pleasantly cool (but never cold).

The Water Quality Branch has been joined by **Cyrus Edwards** who will work with **Jane Suggit** on the Monitoring River Health Program. Cyrus will be undertaking a lot of the macroinvertebrate identification and enumeration work. Since the commencement of MRHI a large number of jars of preserved samples have accumulated at the Branch. In fact, they are everywhere!

Two major wet season studies have commenced. Wet season loadings into Darwin Harbour is being assessed by **Armando Padovan**. Sites representative of industrial, urban, semi-rural and undisturbed catchment will be sampled for nutrients, metals and pesticides. And yes, the Kapalga study into the effect of fire on stream water quality continues. The question this time is: After five years successive years of intense September (late dry season) burning, which have dramatically reduced canopy cover, how quickly does stream hydrology and water quality recover under a no burning regime? First wet season flow this year has a suspended solids concentration of about 100mg/l compared with 500mg/l in previous years. This has also been accompanied by hydrologic changes. So at first impression, the changes seem to be very quick.

Danni Lloyd is on maternity leave with new daughter **Heidi**. Over the next few months **Steve Sly**, a trainee manager and **Valerie Nunn**, who is on vacation employment, will be with the Water Quality Branch.

AUSTRALIAN CAPITAL TERRITORY

The Australian National University

from: Lynda Taylor (Department of Geology)

For my Ph.D research, an attempt will be made to link changes in the ostracod stratigraphies of groundwater discharge lakes in the south-east Murray Basin, with variations in the physical and chemical hydrogeology of the region resulting from Holocene climatic changes and European land-clearance. A groundwater flow model (FLOWPATH), in which the recharge component can be varied, will provide this "link" by enabling biologically-based hydrochemical reconstructions to be interpretated against a background of simulated, regional, groundwater flow.

THE COOPERATIVE RESEARCH CENTRE FOR FRESHWATER ECOLOGY

Lowland research lab for Mildura

A lowland river research laboratory will be established in Mildura following successful negotiations between the Cooperative Research Centre for Freshwater Ecology and the Support Committee for the Establishment of a Lower Basin Laboratory.

The Board of the CRCFE has agreed to allocate $100,000 a year to match funds committed by locals over a three-year term.

Lower Murray Water are offering the CRC a five-year lease on a suitable building in Mildura and staff recruitment has commenced. The laboratory will be part of the Murray-Darling Freshwater Research Centre, based in Albury.

Negotiations are underway to develop a contract to commit the local councils, water authorities, regional groups and CRCFE to financially support the lab for an initial three years.

The Federal Government as well as the NSW, Vic and SA government have also been asked to support the proposal and provide additional funds for the venture.

The proposed research will focus on ii) algal growth in the Darling River; ii) the Menindee Lakes system; and iii) flow regulation and river productivity

Field work commences for Environmental Flows project

Describing the fish communities before and after a flow regime change in the Campaspe River and comparing the timing and success of fish spawning in the heavily regulated Campaspe and the relatively natural Broken rivers are the aims of the field work being conducted by Paul Humphries from the Murray-Darling Freshwater Research Centre in Albury.

The work is part of the Cooperative Research Centre for Freshwater Ecology's five-year Flowing Waters project, Environmental Flow Assessment, which was approved last June and will involve reinstating part of the natural hydrology of the lower Campaspe River by changing releases from Lake Eppalock.

Paul said the river and its fish inhabitants would be studied under its regulated regime for the first two years. This data would be compared with that collected from the less-regulated, Broken River. After this period, 25 percent of inflowing water to Lake Eppalock would be released downstream. This change in the operation of the lake would, he said, substantially increase flows during the winter months, reducing peak flows but extending their duration, allowing the responses of flow-related biological variables to be investigated.

The work is being conducted in collaboration with **John Douglas'** team from Victorian Fisheries Research Institute who are sampling adult fish using electrofishing techniques and fyke nets.

The MDFRC team, comprised of **Paul** and **Luciano Serafini**, are sampling larvae and juvenile fish using light traps and fyke and drift nets. Trawling is also conducted with plankton nets, with a 0.5mm mesh, after dark.

The field trips will be conducted on a monthly basis over the summer for five years.

Industry experience for 13 students

Thirteen Water Studies students from the University of Canberra are working within the water industry this summer as part of their unit in Professional Practice.

Eleven students will work within the Cooperative Research Centre for Freshwater Ecology conducting work on biological monitoring, riparian vegetation and the development of chemical methods at the UC as well at the Narrandera Fisheries Centre and the Fisheries Research Institute, Cronulla.

One student has been employed by ACTEW for the 10-week break and another by the Commonwealth Environment Protection Agency (CEPA).

The Professional Practice Unit has been operating as part of UC's Water Studies course since 1988 and has seen 95 students places with various organisations during that time.

CRCFE Education Program Leader, **Richard Norris**, coordinates the unit. He says both students and employers have been impressed with the mutual benefits obtained from the scheme.

Students have the opportunity to use the knowledge and skills they have developed during the first two years of their course, as well as to develop new skills. The unit not only provides them with paid employment (usually) during their summer break, but enables them to peruse the type of industry positions which might be available to them when they graduate. A number of graduates have gained full-time jobs as a result of this work experience.

The Water Studies Centre at Monash University is also providing five scholarships to undergraduate students this summer. An additional scholarship has been provided by Goulburn Murray Water for a student to work on the Cairn Curran Reservoir in the Lodden Valley.

DTPA finding

The Water Studies Centre, Monash University, was visited recently by Dr **Wim Salomons** from the Netherland Institute for Soil Fertility.

Dr Salomons is an international reviewer of a project being undertaken by the Centre for AKZO, a large international chemical company. The project is seeking to model the behaviour of DTPA - a strong metal complexing agent - in the Murray River. DTPA is used by Australian Newsprint Mill in their paper making process, and concern has been expressed that the very low DTPA concentrations discharged to the Murray at Albury may remobilise heavy metals and cause toxicity problems. The research, which is almost complete, has shown that there is very little potential for the discharged DTPA to remobilise any heavy metals.

Workshop on Nutrient-Sediment Interactions

Showcasing recent research into sediment-nutrient interactions will be aim of a workshop to be held at the MDFRC on April 30-May 1 next year. In addition the workshop is aimed at encouraging collaborative research between universities, the CRCs and government agencies.

The emphasis of the workshop will be on presenting new work, ideas and directions of the role the sediments (including the sedimentary biota) play in the cycling of phosphorus, nitrogen and other nutrients in marine and freshwater environments, with an accent on processes rather than techniques per se. Postgraduate students are encouraged to present information on their research proposals and the direction they see their research developing.

People wishing to present should submit an extended abstract, less than four A4 pages including diagrams, no later than March 25.

Registration for the workshop closes on February 29. The cost is $85 which includes lunches, morning/afternoon teas and the workshop dinner.

Accommodation and travel arrangements are the responsibility of participants.

Contact Dr Darren Baldwin at the MDFRC for further information. Phone: (060) 43 1002. Email: dbaldwin@mdfrc.canberra.edu.au.

Bioassessment on the South Coast, NSW

Biological monitoring work being conducted by University of Canberra Masters student, **Mat Allanson**, is aimed at providing an understanding of the impacts affecting water quality in coastal rivers in south-east NSW.

The project, *Effects of Land Use on Water Quality in Coastal Freshwaters of NSW Determined Using Rapid Bioassessment*, is funded by the Cooperative Research Centre for Freshwater Ecology under its Water Quality and Ecological Assessment program. It complements work the CRC is doing for the national Monitoring River Health Initiative as well as bioassessment work being conducted in the Snowy Mountains.

The survey includes sampling 60 sites at rivers between the Shoalhaven catchment in the north and south to the Wallagaraugh catchment near the Victorian border.

Mat says the work will provide a broader picture of the power of biological monitoring in south-eastern Australia. It will also enable the CRC to develop a predictive model for the area.

Summer sampling will commence in mid-February.

VICTORIA

LaTrobe University

from: Stephen Balcombe

Jason Lieschke Honours project is progressing well. His preliminary results suggest vertical separtion between adult and juvenile Smelt. Dietary analysis thus far infer a preference for copepods by juvenile Smelt while adults consume cladocerans. Meanwhile **Tim Curmi's** interrupted (through the vagaries of nature) Honours project resumes with Tallangatta's Blackfish population awaiting his return with bated breath.

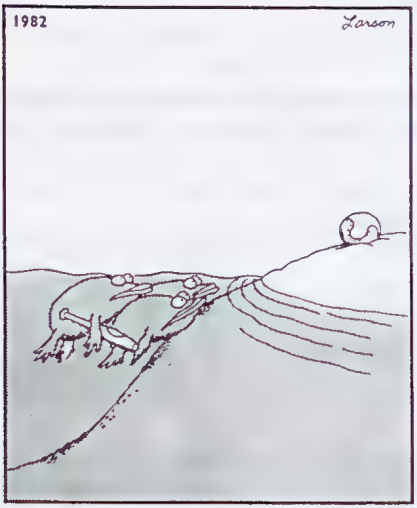
Mardi Versteegan completed her Honours project on "The population structure of the Murray River Crayfish in the Murray and Murrumbidgee River Systems" Populations displayed genetic variation concurrent with spatial separation throughout the catchment. **Lor-Wai Tan's** ecological study of Testate Amoeba in billabongs continues. Preliminary results indicate spatial separation between species within microhabitats.

Stephen Balcombe's field work continues as he amasses Carp Gudgeons by the bucket load and insists upon freezing himself in the chilly depths as he samples periphyton in *Eleocharis* beds. Meanwhile he evades the drudgery of the microscope wherever possible.

Michael Shirley has completed his mega Redfin-Carp experiment at the Benalla Ponds. He is presently painstakingly perusing (sorting) his samples. **Gerry Closs** after a good dose of R&R is preparing himself for 1996. He will be starting off two Postgrad Dips, and two PhD students.

POSTCARD FROM THE SEDGE

?????



Great moments in evolution

"And now, Randy, by use of song, the male sparrow will stake out his territory ... an instinct common in the lower animals."

60 MINUTES

ASL Executive Teleconference, 3 Nov 1995

Present: M.Brock, M.Finlayson, P.Boon, M.Douglas, J.Growns, G.Closs, J.Jackson, S.Wade, R.Marchant

1. **Last Congress**: M.Brock congratulated J.Growns and the other organisers for running such a successful meeting. She suggested that as the congresses were getting bigger each year that a list of participants be available e.g. printed with the abstracts. She also suggested that tea and lunch breaks be longer, and that a definite location for books, flyers and other promomtional material be made available.
2. **Biomanipulation meeting**: ASL is organising this on behalf of LWRRDC to follow the next congress at Berri. An organising committee has been established. Ideas should be sent to Mick Bales who is the chair of this committee.
3. **FASTS**: The policy document has been sent to all regional executive members. They are urged to get feedback from local members. Both positive and negative comments were received about J.Middelton's FASTS presentation at the last congress. The president will not be able to attend the FASTS council meeting in Canberra in Nov. The secretary will see whether P.Cranston or M.Barson are available. It was suggested that FASTS should have a formal way of reporting back to its member societies.
4. **Wetlands**: The president has written to Faulkner (federal minister) seeking to have an ASL representative at the Ramsar convention next year. He has also written to ANCA asking that an ASL member be admitted as a technical representative to the Federal Wetlands Policy Unit. ASL started a wetlands working group at the last congress. P.Boon, M.Finlayson and M.Brock have produced a wetlands document that will be circulated when finalised.
5. **Student prizes**: G.Closs was elected chair of the student prize committee. He had a number of suggestions based on experience at the last congress: student talks should finish well before the last session to give judges an adequate chance to confer before the announcement of the winners; winners should be announced at the conference dinner rather than at the AGM as more members attend the former than the latter; a list of students and the awards they have nominated for should be prepared by the organisers before the conference; the assessment sheets seem to work well but perhaps some of the criteria could be weighted more heavily than others.
6. **Membership issues**: P.Boon suggested that back issues of the newsletter should be sent to new members. He will arrange this with M.Hart and F.Sheldon. He also suggested that the CRCFE and the wetland unit of ANCA be targeted for a membership drive.
7. **Jolly award**: The president and the secretary have both written to D.Mitchell congratulating him on being given the Jolly award. There will thus be two addresses by Jolly award winners at the next congress.
8. **Publicity**: At the last congress a total of 3 radio interviews were given by M.Brock and P.Boon. This level of public awareness of the ASL should be maintained at future congresses.
9. **Congress**: This will be held at the Berri Hotel SA, which can hold 400 people. The AGM will be on the first night (a Monday) and the conference dinner on

the second. Two simultaneous sessions only will be run and poster sessions will be held at night. A timetable of talks will be published in the newsletter before the meeting. Buses from Adelaide airport to Berri will be arranged. The organisers will try to encourage local interest by allowing public access to some of the sessions e.g the posters.

10. **WWW page for the ASL**: A number of societies (NABS, Ecol, Soc America) have opened information pages on the world wide web. M.Douglas will investigate the possibility of doing the same for the ASL.

11. **ISSN number for congress abstracts**: M.Brock suggested that the abstracts should be sent out to institutional members, i.e. libraries, and to others who are interested. It may help librarians if the abstracts have an ISSN number. She will investigate this. Possibly the newsletter's ISSN number could be used.

12. **Newsletter editor**: P.Boon suggested and it was agreed by the executive that F.Sheldon (newsletter editor) should join the executive.

13. **Finances**: R.Marchant reported (on behalf of M.Hart) that at the end of Sept the ASL had $29715.76 in its current account and $36810.71 in the ANZ trust account. The balance in the current account should decrease in the near future as a number of refunds from the last congress have yet to be paid.

14. **Other business**:
    a) It was suggested that abstract booklets should contain a list of conference participants and their addresses and that abstracts should be arranged alphabetically.
    b) M.Brock suggested that the ASL recognise the great contributions to the society made by Prof W.D.Williams and Dr I.A.E.Bayly over many years. A suggestion was to name the student prizes after them.

Financial Report 1994-1995

STATEMENT OF RECEIPTS AND PAYMENTS FOR THE PERIOD 1 JANUARY 1994 TO 31 DECEMBER 1994

	1994	For Period 1/4/93 to 31/12/93
GENERAL BANK ACCOUNT		
Opening Bank Balance	$10,978.24	$16,373.76
RECEIPTS		
Bank Interest	161.11	134.65
Congress - 1995	1,000.00	-
Congress - Net Surplus 1994	3,707.08	-
Congress - 1993	-	5,641.00
CSIRO Journals	7,315.00	3,700.00
Publication Inserts	100.00	-
Special Publications	690.00	130.00
Subscriptions - Members	12,372.50	7,067.50
- Students	1,174.50	542.50
- Institutions	865.00	680.00
- Life	750.00	250.00
Transfers from Investment Accounts	5,000.00	
TOTAL	$33,135.19	$34,519.41
PAYMENTS		
Audit Fees	500.00	500.00
Bank Charges	59.31	54.16
Bio - Diversity Contribution	1,000.00	-
Conference Telephone Calls	1,335.80	-
Congress - 1995	1,500.00	-
Congress - Travel 1994	1,920.00	-
Congress - 1993	1,010.60	16,625.75
CSIRO Journals	5,370.00	-
Honorarium	1,000.00	1,000.00
Insurance - Computer	-	218.00
Miscellaneous	49.00	82.00
Newsletter/Bulletin/Teleconference	10,089.36	4,164.21
Outside Support	100.00	350.00
Petty Cash	150.00	126.00
Stationery/Printing/Office Supplies/Postage	1,234.70	421.05
Subscriptions - F A S T S	1,652.30	
TOTAL	26,971.07	23,541.17
Closing Bank Balance	$17,142.36	$10,978.24

INVESTMENT ACCOUNTS	**ANZ Trustees Common Fund V2 Plus**	**NAB Dep at Call**
Opening Balance	37,551.62	4,542.06
Net Interest Received	1,070.13	52.92
Net Bank Transfers	(4,000.00)	(1,000.00)
Closing Balance	$34,621.75	$3,594.98

Statements 1994-1995

AUSTRALIAN SOCIETY FOR LIMNOLOGY

STATEMENT BY COMMITTEE MEMBERS

In our opinion:

The accompanying Statement of Receipts and Payments are drawn up so as to give a true and fair view of the results of the Society for the twelve months ended 31 December 1994 and the state of affairs as at the end of that year.

M BROCK
President

M HART
Treasurer

30 June 1995

AUDITOR'S REPORT

To the Committee and Members
Australian Society for Limnology

In our opinion, the Statement of Receipts and Payments for the twelve months ended 31 December 1994 give a true and fair view of the state of affairs of the Society and the results of its operations subject to the qualification that we have not been able to check Congress Receipts to attendance records or Congress payments made directly from Congress takings.

COSTER GALGUT PTY LTD

LINDSAY C COSTER FCA
Chartered Accountant

30 June 1995

ARTICLES

A Society for Australian Systematists

Following a meeting held by ABRS in Canberra in October to discuss one aspect of the crisis in systematics - the decline in training -, it became evident that systematists must organise themselves to promote their discipline more forcefully than at present. For some time there has been a need for a general systematics society, encompassing all the various groups of organisms from viruses and bacteria to higher plants and animals and all branches of systematics from alpha-taxonomy to phylogenetic techniques. Such a proposal was made by Penny Gullan (Division of Botany and Zoology, Australian National University) from the floor at that ABRS meeting, and although there was only limited discussion, ensuing correspondence between systematists from all disciplines throughout the country indicates that the time is right.

Although much of the detail needs to be refined at the time of going to press, the following points are likely to be adopted:

1. The primary activities of the society will be to promote systematics as a discipline, to facilitate communication, meetings and collaborative research amongst Australian systematists, to encourage debate on general (methodological) issues in systematics, to lobby for a higher public profile and thereby increase funding for systematics in Australia, and to emphasise the central role of systematics in the biodiversity debate.
2. Communication will be primarily electronic, with a periodical newsletter and frequently updated home page on WWW, but with no journal. Whilst electronic communication alone may exclude some potential members, most practising systematists in Australia either have now, or soon will have access to this effective, rapid and above all, cheap to use technology. Although the initial hub of the society will be physically in Canberra, electronic communication is the best means of achieving decentralisation.
3. We intend to affiliate with the Society of Systematic Biologists, and have already approached their president. This society, which publishes Systematic Biology and is a major proponent of Systematics Agenda 2000, is international and has many Australian members. However, it is naturally Americo-centric and in itself cannot fulfil our Australian needs. Our society intends to have a similar constitution to ASBS. As an additional means of avoiding Canberra-centricity, we propose to follow several other societies in having one or more regional councillor(s) in each capital city. The basis of a network of councillors is already in the process of formation through volunteers (including entomologists, botanists and limnologists) from each capital city, but more activists are needed. A newsletter editor, botanist David Morrison, has volunteered before coercion was required. The name of the society is open to discussion by founder members, but confusion with existing names, such as ASBS will be avoided.

The initial impetus for this society comes from the already existing Systematics discussion groups in Brisbane, Canberra (Coopers and Cladists), Perth and Sydney. These groups have demonstrated how systematists of all disciplines, from morphological to molecular, have much common interest. Discussions over the years have included the crisis in systematics, Systematics Agenda 2000 and other like issues, and make a natural base for the floating of a new national society. However, any perceived narrow methodological base of these groups (if true) will not be imposed on the new society: all systematists, irrespective of discipline or preferred methodology, need to unite to defend our science. Naturally all the proponents of a Systematics Society already belong to various societies which either directly (Australian Systematic Botany Society) or indirectly (e.g. A.S.L., Australian Entomological Society, Ecological Society of Australia, inter alia) reflect our professional interests as systematists. None of us intend to restrict our involvement in these societies, or to undermine their various, and different roles.

The list of prospective members is growing rapidly. In the initial phase we seek only an expression of interest and addition to the electronic mailing list: no subscription please, pending decisions to be taken democratically either electronically or at the first annual meeting to be held in 1996. Membership is available (as foundation member until 1st January 1996) by e-mailing your interest to either Mike.Crisp@anu.edu.au or peter.cranston@ento.csiro.au: you will be added to the mailing list.

Peter S. Cranston
CSIRO Division of Entomology,
Box 1700, ACT 2601, Australia
Phone (+61) 6 246 4282
Fax (+61) 6 246 4000

RAMSAR CONVENTION 1996

From 19-27 March this year, Brisbane will host what has been described as the most significant international environment conference ever to be held in Australia. The occasion is the sixth conference of Contracting Parties to the Convention on Wetlands of International Importance, commonly referred to as the Ramsar Convention.

It all began back in 1971 in the small Iranian town of Ramsar where the representatives of 18 nations put their signatures to one of the most crucial international environment treaties. The Ramsar Convention aims to prevent the loss of wetlands and ensure their conservation and wise use. At present there are more than 80 signature countries.

What occurs in wetlands in one country can have a large impact on the health of migratory species and wetlands in other countries. The pollution of waterways can degrade or destroy wetlands, putting the health and livelihood of people at risk. For these and other reasons, the need for international cooperation for the conservation and management of wetlands was recognised.

When a country joins the Convention it undertakes to designate at least one wetland for inclusion in the List of Wetlands of International Importance. Wetlands are selected as Ramsar sites on the basis of ecological, botanical, zoological, limnological or hydrological criteria. Signature countries are also obliged to promote the wise use of wetlands in their territory, to create wetland reserves and consult with other countries over shared wetlands.

The 'wise use of wetlands' concept is aimed towards modifying the current use of wetlands by humans. It is hoped that this will provide continuous benefit to present generations, and also maintain the natural properties, such as food webs and other ecological processes, for future generations.

The Ramsar Convention Bureau, based in Gland in Switzerland, provides secretariat support to implement the treaty. The Bureau is funded by annual contributions from each of the contracting countries and through other donations. A Wetland Conservation Fund has been set up to provide developing countries with support to join the Convention, attend the conferences and manage specific sites.

The Brisbane Conference will mark the 25th anniversary of Ramsar and the first time contracting parties have met in the southern hemisphere. Around 1,000 delegates from countries around the world are expected to attend. They will discuss actions to protect the world's wetlands and debate a proposed Strategic Plan.

Australia currently has 42 Ramsar sites covering a total area of approximately 4.6 million hectares. In addition, there are numerous valuable and important wetlands in Australia that are not Ramsar sites. Many of Australia's wetlands have outstanding historical or cultural significance and are particularly important as animal refuges in times of drought.

The Australian Nature Conservation Agency, in collaboration with the Conference Organising Committee, has produced various promotional merchandise which it hopes to sell to raise awareness of the Ramsar Convention and wetlands conservation. On offer are ties, scarves and t-shirts bearing the design based on the logo developed specifically for the 1996 Conference (shown above). All proceeds will be directed back into the budget for the conference.

For more information on the Conference, merchandise or to register as an observer, contact the Australian Nature Conservation Agency on 06 250 0792

If you would like a copy of The Ramsar Convention Manual write to:

Ramsar Convention Bureau
Rue Mauverney 28
CH-1196 GLAND
SWITZERLAND

email: ramsar@hq.iucn.ch

Murray Darling Freshwater Ecology Survey

This questionnaire is designed as a short survey of the views of freshwater ecologists about the Murray Darling, and the results will be publicly released. **Anonymity of respondents is assured.** Please return completed questionnaire by 9 February 1996 by mail or fax to Tim Fisher, Natural Resources Campaign Co-ordinator, Australian Conservation Foundation, 340 Gore St, Fitzroy 3065. Ph. (03) 9416 1166 Fax (03) 9416 0767

1. Survey of Respondents' Knowledge & Expertise

This question is designed to enable respondents to indicate their knowledge and expertise on various key subject areas. Depending on the results of this survey, the answers of those respondents who indicate a high level of knowledge and expertise on Murray Darling issues could be of particular interest.

Tick one box for each question...

1.1 How do you rate your level of knowledge and expertise on **the ecology of the Murray Darling river system generally**?

Main area of expertise; Considerable theoretical knowledge &/or experience	Good general knowledge; Some direct experience	General knowledge of subject area; little direct experience	Superficial knowledge compared to other areas of expertise	No real knowledge or experience in subject area
☐	☐	☐	☐	☐

1.2 How do you rate your level of knowledge and expertise on **fish and/or invertebrate ecology** in the Murray Darling?

Main area of expertise; Considerable theoretical knowledge &/or experience	Good general knowledge; Some direct experience	General knowledge of subject area; little direct experience	Superficial knowledge compared to other areas of expertise	No real knowledge or experience in subject area
☐	☐	☐	☐	☐

1.3 How do you rate your level of knowledge and expertise on **wetlands and floodplain ecology** in the Murray Darling?

Main area of expertise; Considerable theoretical knowledge &/or experience	Good general knowledge; Some direct experience	General knowledge of subject area; little direct experience	Superficial knowledge compared to other areas of expertise	No real knowledge or experience in subject area
☐	☐	☐	☐	☐

1.4 How do you rate your level of knowledge and expertise on the Murray Darling's **environmental flow requirements**?

Main area of expertise; Considerable theoretical knowledge &/or experience	Good general knowledge; Some direct experience	General knowledge of subject area; little direct experience	Superficial knowledge compared to other areas of expertise	No real knowledge or experience in subject area
☐	☐	☐	☐	☐

1.5 How do you rate your level of knowledge and expertise on **water quality and its relationship to freshwater ecology**?

Main area of expertise; Considerable theoretical knowledge &/or experience	Good general knowledge; Some direct experience	General knowledge of subject area; little direct experience	Superficial knowledge compared to other areas of expertise	No real knowledge or experience in subject area
☐	☐	☐	☐	☐

2. Ecological Status of the Murray Darling

*Tick **one box** only for each question:

2.1 How do you rate the ecological health of the **riverine (in-stream) environments** of the Murray Darling?

Severely Degraded *High Priority for Remedial Action*	Moderately Degraded *Medium Priority*	Acceptable Level of Degradation *Low Priority*	Moderately Healthy *Maintenance Only*	Very Healthy *No Action Needed*
☐	☐	☐	☐	☐

2.2 How do you rate the ecological health of **floodplains** in the Murray Darling?

Severely Degraded *High Priority for Remedial Action*	Moderately Degraded *Medium Priority*	Acceptable Level of Degradation *Low Priority*	Moderately Healthy *Maintenance Only*	Very Healthy *No Action Needed*
☐	☐	☐	☐	☐

2.3 How do you rate the ecological health of **wetlands** in the Murray Darling?

Severely Degraded *High Priority for Remedial Action*	Moderately Degraded *Medium Priority*	Acceptable Level of Degradation *Low Priority*	Moderately Healthy *Maintenance Only*	Very Healthy *No Action Needed*
☐	☐	☐	☐	☐

2.4 How do you rate the ecological health of **riparian vegetation** along the system?

Severely Degraded *High Priority for Remedial Action*	Moderately Degraded *Medium Priority*	Acceptable Level of Degradation *Low Priority*	Moderately Healthy *Maintenance Only*	Very Healthy *No Action Needed*
☐	☐	☐	☐	☐

2.5 How do you rate the **overall ecological health of the Murray Darling River system and its floodplains and wetlands**?

Severely Degraded *High Priority for Remedial Action*	Moderately Degraded *Medium Priority*	Acceptable Level of Degradation *Low Priority*	Moderately Healthy *Maintenance Only*	Very Healthy *No Action Needed*
☐	☐	☐	☐	☐

Further Comments re question 2:.....

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3. Major Ecological Issues in the Murray Darling:

Please rank the following issues **in order of their relative importance for the freshwater ecology** of the Murray Darling. Rank **major** issues from 1 to 3. Rank *minor* issues in each category from 1 to 5 or 1 to 6.

	minor issues:	**major** issues:
• **Environmental Flow Requirements**		☐
• *Allocations of Water Specifically for Ecosystem Purposes*	☐	
• *Flooding Regime & Floodplain Management*	☐	
• *Seasonal Flow Variability*	☐	
• *Short-term Variability in Water Levels*	☐	
• *Potential Impact of Climate Change*	☐	
• **Water Quality**		☐
• *In-stream Salt Levels*	☐	
• *Toxic Blue-green Algae*	☐	
• *Pesticide/Herbicide Pollution*	☐	
• *Nutrients*	☐	
• *Turbidity*	☐	
• **Fish, Invertebrate and Waterbird Habitat Requirements**		☐
• *Barriers to Fish Movement/Migration*	☐	
• *Status of Riparian, Wetlands & In-stream Vegetation*	☐	
• *Impact of Introduced Fish*	☐	
• *Water Temperature (ie. temp. of dam releases)*	☐	
• *Siltation, Bank erosion & Snag removal*	☐	
• *Loss of Food Supplies*	☐	
• *Reduced Incidence of Flooding*	☐	

4. Status of Scientific Knowledge

How do you rate the adequacy of scientific knowledge in each of the following areas?

	Poor	Adequate	Good
• The freshwater ecology of the Murray Darling generally	☐	☐	☐
• Environmental flow requirements	☐	☐	☐
• Water quality and related issues	☐	☐	☐
• Fish, bird and invertebrate habitat requirements	☐	☐	☐

Please lift-out & return completed questionnaire by **9 February 1996**, to Tim Fisher, Natural Resource Campaign Co-ordinator, Australian Conservation Foundation, 340 Gore St, Fitzroy, 3065. Fax (03) 9416 0767

5. Research Funding & Adoption of Research Results

How do you rate the adequacy of funding for research into freshwater ecology?

	Poor	Adequate	Good
• Funding for freshwater ecology research generally	☐	☐	☐
• Funding for ecological monitoring and SOE* reporting	☐	☐	☐
• Direction of funds to nationally-agreed priority areas	☐	☐	☐
• Focussing research towards management plans/issues	☐	☐	☐

*(*State of the Environment)*

6. Freshwater Resource and Ecology Management Issues

6.1 In your assessment, **to what extent is knowledge of freshwater ecosystems translated into action by agencies responsible for the Murray Darling?**

	Not much at all	To some extent	To a large extent
• In the allocation of water to the environment	☐	☐	☐
• In the development of river, dam & weir management plans	☐	☐	☐
• In developing wetland & floodplain management plans	☐	☐	☐
• In decision-support systems and processes	☐	☐	☐
• In funding for the adoption of management plans	☐	☐	☐

6.2 How do you rank each of the following as **obstacles to improved environmental management** in the Murray Darling? *Please rank the options from 1 to 6 in order of significance.*

- Lack of work specifically to determine environmental flow requirements ☐
- Political influence of irrigation community ☐
- Low level of public awareness about the Murray Darling ☐
- Lack of scientific knowledge ☐
- Inaction by state and commonwealth governments ☐
- Other (please specify) ☐

Additional Comments:.....

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KASUMIGAURA '95 DECLARATION

From the Sixth International Conference
on the Conservation and Management of Lakes
Kasumigaura, Japan, 23-27 October 1995

WE, the participants of the Sixth International Conference on the Conservation and Management of Lakes, and

COMPRISING Citizens from many countries throughout the World and from all continents;

ACKNOWLEDGING that water is the basis of all life and that lakes and reservoirs, as an integral component of our planet's life-support systems, are essential for the maintenance of human life and represent resources and assets of enormous economic, cultural, aesthetic and recreational importance;

NOTING that lakes are subject to many demands, to significant loss of biodiversity, and to increasing degrees of pollution and degradation, and that all such events are accelerating because of rising human pressures;

RECOGNISING that major issues for the management and conservation of lakes include those of regional and global, and of current and future significance;

AND RESPONDING to the advice and comments of participants at the conference,

MAKE THE FOLLOWING DECLARATIONS:

I. Declaration on Population and Biodiversity:

Since human populations and aquatic ecosystems are interdependent, and lake deterioration and 103s of biodiversity are inextricably linked to population pressure and human activity, we declare as follows: we encourage and support efforts (i) to limit human population pressures, to develop ecological sustainability, and to share the wealth of the world, (ii) for those programs developed to maintain the biodiversity of our planet, and (iii) to bring about changes to individual life-styles which minimise the ecological impact of humans on lakes.

II. Declaration on the Environmental Impact of Development Projects:

We note that water supply in many parts of the world has become - or is rapidly becoming - of major concern for dependent human populations. Large scale water resources projects, both national and international, have become increasingly significant. We propose that such projects should be subjected to environmental impact assessments, monitoring of on-going activities and extensive post-evaluation with details reported at conferences as part of the international learning experience.

III. Declaration on Knowledge and Technology Transfer:

All persons present at the Kasumigaura '95 Conference, whether Scholar, Administrator, Industrialist, or Member of the Public or Media, are Global Citizens with valuable opinions, and have made significant contributions derived from broad experiences. The spirit evolving from this broad spectrum should be captured for the future. The participation of representatives of the less-advantaged countries of the world at Kasumigaura '95 enriched the proceedings and improved understanding of the difficulties faced by many peoples of the world in their struggle to obtain adequate supplies of good quality water. To support this participation, and to ensure the transfer of knowledge, experience and technology between peoples and nations, we recommend, firstly, that future conferences continue to encompass a broad and diverse attendance to ensure the transfer of knowledge and experiences; secondly, that an international consortium of lake and limnological research centres and institutes be established to ensure optimum transfer of appropriate technology from one region to another and between sectors of society; and thirdly, continued efforts be made for the advancement of technology and its application to the improvement of lake water quality.

IV. Declaration on Partnership

The effective management and conservation of lakes and their catchments can no longer be undertaken by groups working in isolation. We call for the development of partnerships between Government, Industry, Scientists and the Public that are dedicated to the concept of collaboration in the management and conservation of lakes of the world. Sharing information and facility with mutual communication is essential for strong partnerships and good decision making. We recognise the uniqueness of lakes in different regions and call for a regional approach to lake and catchment management based on participation between the public and appropriate administrative levels of organisation in those communities dependent on the lakes.

V. Declaration on Education:

Basic understanding is the prerequisite to problem solving. Impacts on lakes reflect and integrate processes involving land-use land-form and human use of natural resources. We declare the need for increased emphasis on environmental education an(l particularly for education on lake Issues. We further declare that such education be developed for all ages and be implemented by all nations. At the same time, we recognise that regional cultures and traditions require the development of national curricula integrating local cultures as well as global understanding to ensure the commitment of local communities to the conservation of the world's diminishing aquatic resources.

VI. Declaration on Integrated Catchment Management:

Recognising that impacts on lakes are the result predominantly of actions or activities in catchments we declare our support for Integrated Catchment Management. This involves detailed planning of all components accompanied by Environmental Impact Assessment for those projects which significantly modify the

landscape land-use or drainage characteristics. In addition, catchment management must include a greater sensitivity to environmental habitat change, lead to life-style adaptations, protect the natural cleansing properties of wetlands, and adopt an ecosystem approach to catchment management.

VII. Concluding Declaration on Common Understanding:

We ask you all to listen to the sound of lakes, to the voices of people, especially the women and children; to the wisdom of science; and learn from past lessons so as to avoid future mistakes, gain vision for the future, and thus achieve everlasting sustainability. This we ask to provide a legacy for our children and those yet to be born, a legacy of which we will not be ashamed.

The preparation of this declaration took cognisance of public concern for Lake Kasumigaura and the requests of the citizens have been entrenched in the document we recognise with gratitude contributions so freely given which have provided substance of value to the rest of the community here assembled.

We thank the Ibaraki Prefecture for their hospitality and extraordinary generosity to all participants of the Kasumigaura '95 Conference. We acknowledge, with gratitude, the hard work of all the staff and volunteers who made this Conference so successful.

October 2,, 1995
The Sixth International Conference on the Conservation and Management of Lakes
- Kasumigaura '95 -

(Chairman, Drafting Committee: Hiroyoshi Shiigai)

ANNOUNCEMENTS

POSITIONS VACANT

Wetlands International - Asia Pacific

Wetlands International - Asia Pacific (formerly Asian Wetland Bureau) is an NGO dedicated to the protection and wise use of wetlands and their resources in the Asia-Pacific region. It operates offices in Malaysia, Indonesia and Australia (the latter hosted by ANCA Wetlands & Migratory Wildlife Unit in Canberra).

Wetlands International - Asia Pacific works in conjunction with national conservation agencies, local NGOs and communities and international partner organisations. Major areas of activity include inventory of wetland biodiversity, management planning for wetlands, building local institutional capacity for wetland management, and wetland information services.

Applications for the following senior staff positions are invited from motivated and appropriately qualified persons with experience in the Asia-Pacific region:

- **Manager, Southeast Asia Programme**:
  long-term; based in KL; develop regional programme, supervise projects.

- **Project Manager (Technical Advisor): Wetland Conservation Hong Kong & China:**
  1.5 yrs; based in Hong Kong/Beijing; N Asia projects, managemrnt of Ramsar sites.

- **Project Team Leader: Mangrove Rehabilitation Thailand:**
  3 yrs; based in Hat Yai; lead mangrove rehabilitation project team, work with community.

- **Project Team Leader: Ramsar Site Management, Malaysia:**
  3 yrs; based in Pahang; lead team to develop management plan for Ramsar site.

- **Project Managers (Technical Advisors):**
  1-3 yr contracts; based in Indonesia; wetland management, EIA, landuse planning.

- **Database/Information Specialist:**
  1+ yrs; based in KL; develop regional wetland databases & electronic networking.

Salary and benefit packages take account of local conditions and expatriate needs.

Further Details:
For further details contact Mr Muralee Menon at Wetlands International - Asia Pacific headquarters, Institute for Advanced Studies, Universiti Malaya, 59100 Kuala Lumpur , Malaysia.
Tel: +60-3-7566624; Fax: +60-3-7571225;
Email: awb@pop.jaring.my

FOR SALE

Limnology and Oceanography
Volume 17[1972] - Volume 39[1992].
Volumes 17 - 32[1987] are bound in red and gold-lettered on the spine, volume 33 onwards are unbound.

Contact:
Dr Ian Bayly [who retires on 31/12/95]
Dept of Ecology and Evolutionary Biology,
Monash University, Clayton, Vic., 3168
e-mail: ian.bayly@sci.edu.au

NEW BOOK

Hydrology and Hydrochemistry of British Wetlands

Edited by
JOCELYNE HUGHES
University of Reading
and
LOUISE HEATHWAITE
University of Sheffield

504 pages September 1995
Cloth £59.95

Ordering Information:
Fax: +44 (0)1243 771225 Attn: Rachel Green
Email: GBJWSRG1@IBMMAIL.COM

REPRINT COLLECTION FOR MDFRC

Ian Bayly is retiring this month from an excessive number of years' active service at Monash Zoology, latterly Ecology & Evolutionary Biology. Ian has graciously donated his reprint collection to be housed with the ASL bibliography at MDFRC. Also with Ian's reprints is the predominantly copepod literature of the A.G. Nicholls reprint collection, which was in Ian's keeping.

The collection will be maintained by Russ Shiel, in the Microfauna Lab. at MDFRC. Direct requests for information or copies of papers to Estelle Oliver, the librarian at MDFRC. The several thousand reprints are not yet entered into an electronic retrieval system, however Ian's card system is with the collection, and any reprint can readily be found. We will work towards getting them all on ProCite and/or Papyrus.

NEWS FROM FASTS

COURSES IN MEDIA SKILLS AND PRESENTATION SKILLS

There is increasing pressure on scientists to explain their work. The quest for funding, technology transfer, normal scientific discourse and satisfying public interest all demand clarity, structure and the need to meet audience expectations.

Toss Gascoigne and Jenni Metcalfe run Media Skills and Presentation Skills courses for scientists across Australia (*more information on next few pages*). They are highly practical workshops, and limited to a maximum of ten participants to allow full involvement in all exercises. Individual feedback on performance is a feature.

The workshops are specifically designed for scientists, a group which can find it difficult to explain their work. Scientists demand both accuracy and detail, and often use unfamiliar scientific terms which can puzzle a lay audience. Giving simple and direct explanations of their work is one skill the courses address.

Participants have included scientists from Universities, CSIRO, CRCs and State Government agencies. Scientists and those involved in science are welcome to join courses on the dates listed in the brochure. The courses normally last two days, but special courses can be designed to meet the needs of the sponsoring organisation.

Jenni Metcalfe (Senior Consultant, Econnect)
Toss Gascoigne (Executive Director, Federation of Australian Scientific and Technological Societies)

Presentation Skills Courses for scientists

Have you been asked to talk about your research at international conferences, in-house seminars or to small groups of stakeholders?

Can you talk to audiences with confidence?

Learn how to meet the expectations of different audiences and get your message across. Enrol in a Presentation Skills Course especially designed for scientists.

This practical two-day workshop teaches you to:

- give presentations with **confidence**
- **structure** talks in a logical way
- deliver **interesting and animated** presentations
- handle the unexpected **question**
- use **visual aids** to add impact

The aim of the Presentation Skills Course is to help participants to communicate their message effectively to a range of audiences.

What makes a good presentation? What are the key ideas you want to get across? What does your audience want to learn from your talk? How do you structure a talk for maximum impact? How do you overcome nerves?

This two-day course is **intensely practical** and includes a number of "speak on your feet" exercises with lots of tips given for personal improvement.

Participants deliver "before-and-after" five minute presentations, for individual feedback on strengths and weaknesses.

Understand the principles behind structuring and delivering an effective presentation - and **learn how to make a talk work for you and the audience**.

Specific topics include:

- structuring and preparing an effective presentation
- framing the message
- overcoming nerves
- using body language, voice and gestures
- analysing the audience
- making the best use of audio-visual aids
- dealing with questions

The course fee includes:

- comprehensive notes
- take away video tape of 5 minute presentations
- individual feedback on presentations
- lunch and other refreshments.

Group size is strictly limited to allow participants maximum practical experience.

The course runs from 9.00 am until 5.00 pm on both days.

This is what course participants say:

"I learned in a variety of ways, listening to brief lectures, picking up tips from accomplished practitioners, and being part of open discussions."

"Confidence boosting - the whole two days were refreshing and stimulating."

"It helped us enormously"

"The course was clearly set out and interesting, with lots of reinforcement."

"Most professionally run - well worth the time and money."

"The support scientists gave to each other during the whole event was magic."

"Having two presenters and guest presenters maintained interest."

The presenters

Toss Gascoigne and Jenni Metcalfe have extensive experience working with scientists on communication issues. They have broad skills in journalism, science communication and education.

Other courses

The presenters also run two-day Media Skills Courses for scientists seeking to develop their ability to use the media to communicate messages effectively to a range of audiences. This course covers controlling the media agenda, developing interview skills and improving accuracy of media coverage.

Specially tailored courses can be designed to suit the individual requirements of different organisations. Discuss your needs with the presenters.

For further information contact:
Jenni Metcalfe
ECONNECT
PO Box 464
Paddington QLD 4064
Phone (07) 3367 2646
Fax (07) 3217 6376
E-mail jenni.econnect@b022.aone.net.au

Presentation Skills Course Dates - 1996

Sydney	January 29-30
Perth	February 12-13
Melbourne	March 18-19
Townsville	April 22-23
Darwin	May 13-14
Canberra	June 11-12
Hobart	July 22-23
Sydney	August 12-13
Brisbane	September 16-17
Adelaide	October 21-22

Please note numbers are strictly limited to allow all participants maximum practical experience. Register early to ensure your place.

If these dates do not suit, other courses can be run by special arrangement. Discuss your needs with the presenters.

Learn how to make a talk work for you and the audience.

Presentation Skills Courses for scientists

Registration form:

Please fax, post or email to Jenni Metcalfe at least two weeks before the commencement date of the Course

Yes, I would like to attend the Presentation Skills Course to be held in:
[city] _____ on [date] _____ 1996.

Name (include title, first name and surname):
Organisation:
Postal Address:

Phone: Fax:
Email:
Cost: $495 per participant
Method of payment:

- Costcode: _____ (CSIRO people only)
- Cheque made out to Econnect Pty Ltd

Further details of the course will be sent to you when you register.

MEDIA SKILLS COURSES
for scientists

Do people know about your research?

About how it is going to affect them? And why it should continue to be funded?

Learn how to use the media to get your message across. Enrol in a Media course specially designed for scientists.

This practical two-day workshop helps you to:
- handle the media - **control**
- improve your interview technique with working journalists - **technique**
- get your message out the way you want it - **accuracy**

The aim of the Media Skills Course is to help scientists control their media appearances.

How do you contact journalists? How should a scientist handle awkward or potentially embarrassing questions? What preparation needs to be done? How do you stop the media from getting the facts wrong or misrepresenting the story?

Understand what a journalist needs to make a good story and **learn how to make the media work for you**.

This two-day course is intensely practical and brings in **five** working journalists from television, radio and newspapers. Practice your interview skills, and discuss your research with journalists to help shape your story ideas.

Specific topics include:
- how to handle television, radio and newspaper interviews
- turning good science into good media
- how to make the big announcement
- what to do when a journalist knocks on your door
- working with your media liaison officer
- different media, different techniques
- handling the difficult questions
- what makes a good media release

The course fee includes:

- comprehensive notes
- take away tapes of all television and radio interviews
- individual feedback on interview technique
- lunch and other refreshments

Group size is strictly limited to allow participants maximum practical experience.

The course runs from 9.00 am until 5.00 pm on both days.

This is what course participants have said:

"Best workshop I've been to."
"Hard work - and I enjoyed very minute."
"It was very enlightening to hear professional communicators and journalists explain what was required to publicise science stories."
"Meeting working journalists was great."
"The notes were excellent, the organisation was excellent, the speakers were fluent, clear and knowledgable."
"There is such a great need for a course of this design and content."
"Talking my work over with journalists really helped to clarify how to present it to the media."
"I appreciate the opportunity to participate, and see science as the winner. Thanks."

The presenters

Toss Gascoigne and Jenni Metcalfe are communication professionals working in close daily contact with scientists. They have backgrounds in journalism, science communication and education.

Other courses

If this course structure does not suit your needs, specially tailored courses can be designed. Discuss your needs with the presenters.

The presenters also run two-day Presentation Skills Courses for scientists seeking to develop skills in communicating their message effectively to a range of audiences. This course covers three main aspects of giving a talk - what you say, the way you say it, and supporting visual aids.

For further information contact:
Jenni Metcalfe
ECONNECT
PO Box 464
Paddington QLD 4064
Phone (07) 3367 2646
Fax (07) 3217 6376
E-mail jenni.econnect@b022.aone.net.au

Media Skills Course Dates - 1996

Sydney	Media Skills, February 1-2
Perth	Media Skills, February 15-16
Melbourne	Media Skills, March 21-22
Townsville	Media Skills, April 25-26
Darwin	Media Skills, May 16-17
Canberra	Media Skills, June 13-14
Hobart	Media Skills, July 25-26
Brisbane	Media Skills, September 19-20
Adelaide	Media Skills, October 24-25

Please note numbers are strictly limited to allow all participants maximum practical experience. Register early to ensure your place.

If these dates do not suit, other courses can be run by special arrangement. Discuss your needs with the presenters.
Learn how to make the media work for you.

MEDIA SKILLS COURSES for scientists

Registration form:

Please fax, post or email to Jenni Metcalfe at lease two weeks before the commencement date of the Course

Yes, I would like to attend the Media Skills Course to be held in:
[city] _____ on [date] _____, 1995.

Name (include title, first name and surname):
Organisation:
Postal Address:

Phone: Fax:
Email:
Cost: $495 per participant
Method of payment:

- Costcode: _____ (CSIRO people only)
- Cheque made out to Econnect Pty Ltd

Further details of the course will be sent to you when you register.

CONFERENCE REPORTS

SIL 1995 - São Paulo Brazil

From: Ian Campbell (Ian.Campbell@sci.monash.edu.au)

The XXVI Congress of SIL held from the 23 to 29 July in São Paulo, Brazil, was attended by 943 participants from 63 countries. São Paulo has a population of about 18 million people, none of whom speak English. There a many banks spread throughout the city, and one at the Anhembi Conventions Center, where the conference was held, but very few of them change foreign money. The bank at the convention center didn't. The Post Office didn't sell envelopes, but they had very nice T-shirts. This was an interesting conference! As with Barcelona the Paulinistas have a fine line in mugging, Dr Marchant would have been right at home. For the 2001 congress we may have to fly some expert muggers in specially.

Professor Williams presented the Kilham Memorial Lecture, speaking on "The largest, highest and lowest lakes in the world: saline lakes" which he illustrated (with some difficulty) with slides and overheads. The Baldi Lecture was presented by Henri Decamps on "Renewal of riparian forest within floodplains: a landscape perspective".

Among the many highlights of the conference for me were the large number of young Brazilian limnologists who presented work, mainly as posters, at the conference. There seems to be a population explosion in Brazilian limnology which must be a good sign for the future. Another highlight was Cafe Piu Piu, and establishment of which I'm sure Professor Winterbourn would have approved. The Banquet on the final evening included a band and dancing. A Brasiliero commented to me "The gringos get drunk and dance very badly, it is very funny".

Professor Williams has accepted the position of editor of the proceedings of the society (which prompted a comment in the meeting of national reps "has he seen a psychiatrist?), and in future the proceedings will appear under an English title - reflecting the fact that the contents are now almost exclusively in English. Australian delegates were delighted that Professor Williams was able to provide us all with 20kg of manuscripts to bring back to get our luggage up to weight.

The scientific side of the congress was marred by a large number of "no shows" - something that SIL is now looking at addressing in future congresses. There were interesting sessions on organic processing, and large river studies, and numerous (although for me less interesting) papers on toxicity testing and water quality monitoring. The most frustrating aspect was the 9 concurrent sessions, and the papers you want to hear are always all on at the same time.

The next congress will be held in Dublin, in 1998. It promises to be larger than Brazil, and will probably run a little more smoothly, oiled by the water of life.

INTERNATIONAL UNION OF THEORETICAL AND APPLIED MECHANICS SYMPOSIUM

The Centre for Environmental Fluid Dynamics, part of the Centre for Water Research at the University of Western Australia, recently sponsored the International Union of Theoretical and Applied Mechanics (IUTAM) symposium.

The symposium on Physical Limnology was held in Broome, WA, from September 10-14 and was attended by more than 50 Australian and international experts. It was chaired by Professor Jörg Imberger, director of the Centre for Environmental Fluid Dynamics and Chair of the Centre for Water Research.

The aim of the IUTAM symposia is to assemble a group of active scientists within a well-defined field for the development of science within that field. The number of participants is restricted to enable effective communication within the group and thus attendance is by invitation only.

The programme was divided into a number of sessions focussing on specific areas such as biogeochemical processes, forced motions and surface-layer dynamics. There were numerous poster presentations as well as special sessions on field instrumentation and laboratory techniques.

The speakers represented well-respected international institutions. Expert Angus McEwan of the Bureau of Meteorology, Tasmania and Antarctica Region, gave a special lecture while John List of the California Institute of Technology concluded the symposium. The Centre for Water Research was well represented with staff and students presenting posters and involved too in the sessions of laboratory techniques and field instrumentation.

Diana Frylinck
Centre for Water Research
University of Western Australia
Ph: 9 380 2577
Fax: 9 380 1015

WISE USE OF WETLANDS WORKSHOP
Australian National Conservation Agency
Canberra, 4-6 December 1995

From: Jim Puckridge (jpuckrid@zoology.adelaide.edu.au)

The Workshop.

The workshop was attended by 90 invited representatives of wetlands science, conservation, primary industry, tourism, state, local and federal government, overseas aid organisations, and other community groups. The majority of representatives were from government agencies. A glaring deficiency was that only one Aboriginal organisation - The Northern Lands Council - was present.

The purpose of the workshop was to draft a Wetlands Policy. The parameters for the policy were largely set by the keynote speaker, James McCuaig, of Environment Canada, who described the Canadian Federal model. He argued for a Federal, not a National policy, and one which would not attempt to regulate, but would achieve compliance through incentives and Federal example. This model seems to me unlikely to be effective in Australia, but it was supported by the majority of representatives. There seems no possibility that enabling legislation for Ramsar will be a pre-election commitment by the Federal Government, nor will there be a Federal attempt to get the States to endorse the policy as a national document, binding on the States. The prevailing view was that the Commonwealth has sufficient regulatory powers (through for example, the Environmental Protection (Impact of Proposals) Act) to intervene if absolutely necessary. Considering the record of Commonwealth protection of Ramsar wetlands, this is not a reassuring prospect.

However, the outcome - the workshop draft document - did reflect a strong consensus for conservation and rehabilitation of wetlands. Though there was a protracted struggle over the balance of conservation vs use in the policy, the result (due in no small part to the determination of several limnologists) was a definite emphasis on conservation. Let's hope this emphasis can be retained in the final document.

What Now?

- The National Wetlands Advisory Committee will review and polish the workshop draft.
- This draft will be considered (and revised?) by relevant Federal Departments.
- A special opportunity will be provided for State Government agencies to consult with ANCA on the draft (and revise it further?).
- The resulting draft, and the supporting ANCA Information Paper, will be sent out for public comment from late December to the end of January. (The Information Paper can be obtained from ANCA now - ring Bill Phillips, Director, Landscape Conservation Unit, ph. 06 250 0200).
- The timetable is extremely tight, because of the political imperative to get a policy - or at least a draft of one - to the Ramsar Conference in Brisbane in March. It means concerned limnologists should network intensively to get a strong policy up in March - this is a unique window of opportunity.

SYMPOSIUM ON SPATIAL AND TEMPORAL SCALING OF ECOLOGICAL PROCESSES IN FRESHWATER SYSTEMS.

The Symposium was sponsored by the CRC for Freshwater Ecology, Land and Water Resources Research and Development Corporation (LWRRDC) and Monash University. The Symposium was held at at Monash University between 6-8 December 1995.

Speakers were: Ralph MacNally (Monash University), Steve Carpenter (University of Wisconsin), Graham Harris (CSIRO, Canberra), Stuart Fisher and Nancy Grimm (Arizona State University), Tony Underwood (University of Sydney), Sam Lake (Monash University), Jane Doolan (Dept. Water Resources, Melbourne), Peter Fairweather (CSIRO, Griffith), Mike Keough and Barbara Downes (University of Melbourne), Scott Cooper (University of California, Santa Barbara), David Lodge (University of Notre Dame, Indiana).

All papers were of one hour duration followed by half an hour discussion and debate. All papers were fantastic and we thank the CRC, LWRRDC and Monash University for sponsoring the Symposium.

Particularly interesting - we found Steve Carpenters paper on food web manipulation in Lake Mendotta (Wisconsin) via mass stocking of the lake with fish to improve water quality. The experiment worked well until locals found the fish stocks an attractive recreational pass-time. Thus, in the long-term perhaps we can't rely on short term biomanipulation but need to concentrate on large scale features like improving agricultural practices and the interception of non-point source pollution.

Stuart Fisher illustrated how sand-bar configuration influences N and P cycling in Sonoran desert streams, thus relating scale to spatial nutrient processes. Nancy Grimm took up the temporal perspective and gave a clear account of the scale concepts "grain" and "extent". This created debate between the freshwater and marine ecology representatives highlighting differences in explaining variability at different spatial scales between the two systems.

Sam Lake discussed disturbance effects at different scales and introduced a new type of disturbance: "ramp" disturbance. Differing from "pulse" and "press" disturbance, "ramp" disturbance involves a steady (stepped) increase in disturbance with time (like a staircase). Continuing the second half of the Lake-Underwood paper, Tony Underwood stressed the need for hierarchical and nested designs to determine the appropriate scale for sampling, ventured into some meta-statictics and recommended fractal analysis as this is scale-free. Overall, both speakers highlighted the need to relate spatial scale to the life history of the organism.

The concentrated effort in the lecture theatre was rewarded with the Conference Dinner where the wine turned out to be free and Darryl Nielson entertained us (and attendees at a Maths Conference) with ABBA impersonations.

Stuart Blanch and Fran Sheldon
Zoology Department, University of Adelaide

CONFERENCE CAPERS

AUSTRALIA 1996

- **Australian Society for Limnology**, 29 September to 2 October 1996, Berri, South Australia. Further information available in the March 1996 issue of this Newsletter.

- **Sixth International Behavioural Ecology Congress**, Canberra. 29 September to 4 October 1996. Information: isbe6@anu.edu.au, or to ISBE6, Attention Andrew Cockburn, Division of Botany and Zoology, Australian National University, Canberrra ACT 0200 Australia.

- **Ramsar Convention** to be held in Brisbane from 19-27 March 1996. The conference will celebrate the 25th anniversary of the meeting in the Iranian town of Ramsar where the conference text was agreed. See the article by Max Finlayson in the "Articles" section of this newsletter. Further information on the Convention is Bill Phillips from ANCA in Canberra - Fax 06-2500384, phone 06-2500777.)

- **The Scientific Savant in Nineteenth Century Australia: a Celebration of the Life, Times and Legacy of Ferdinand von Mueller**, 30 September - 1 October 1996. Part of the Commemorative Conference Royal Botanic Gardens, Melbourne. This conference will include sessions on Australia/overseas scientific links; Intercolonial relations in science; The scientific botanic garden; Scientific explorations in Australia; Darwinism in Australia; Philosophies in Australia; Amateurs and professionals in Australian Science and Government Science; Scientific education. For more information contact Dr Tim Entwisle Phone 03-655 2300, Fax 03-655 2350, Email entwisle@botany.unimelb.edu.au.

- **Beyond the Floras**, 3-5 October 1996. Part of the Commemorative Conference Royal Botanic Gardens, Melbourne. This conference will include sessions on The future of taxonomy; Techniques and developments of importance to systematic botany; Applications of taxonomic information. For more information contact Dr Tim Entwisle Phone 03-655 2300, Fax 03-655 2350, Email entwisle@botany.unimelb.edu.au.

- **Ecological Society of Australia** (tentative) 9-12 July, 1996, Townsville, Queensland. Information from Ross Alford, Dept. of Zoology, James Cook University, Townsville, Qld 4811. Fax: 077-251570, Email: ross.alford@jcu.edu.au.

- **Second World Fisheries Congress**, 28 July to 2 August, Brisbane, Queensland. Information from Congress Secretariat, PO Box 1280, Milton Qld 4046. Fax: 07-3691512.

- **INTECOL V International Wetlands Conference**, 22-28 September 1996, Perth, Western Australia. Information from Dr Jenny Davis, Fax: 09-3104997 Email: davis@essun1.murdoch.edu.au.

- **7th International Conference on Small Freeliving Amoebae**, 7 - 12 January 1996, Adelaide Women's and Children's Hospital, Adelaide, South Australia. Contact: Mr Bret Robinson (Convenor) FAX 61-8-2590228 (Also separate Announcement in this Newsletter)

- **International Symposium on Environmental Chemistry and Toxicology**, 14-18 July 1996, Sydney. The meeting incorporates the First Conference for SETAC-Pacific, the Fifth Conference of the RACI Environment Dividion and the Third Conference of the Australasian Society for Ecotoxicology. Contributions on all aspects of environmental chemistry and toxicology will be considered. There will be sessions for formal papers and posters, as well as workshops on specific issues. For registration details, including the call for papers contact Ngarita Bishop, InterSECT 96, PO Box 787. Potts Point NSW 2011, Australia. Ph: +61 (0)2 357 2600, Fax: +61 (0)2 357 2950. Email: intersect96@syd.dcet.csiro.au

OVERSEAS 1996

- **Victoria Falls Conference on Aquatic Systems**, 15-19 July 1996, Elephant Hills Hotel, Victoria Falls, Zimbabwe. The conference is jointly organised by the Southern African Society of Aquatic Scientists, the River Basin Management Technical Division of the Water Institute of Southern Africa and the Water Engineering Division of the South African Institution for Civil Engineers. The conference will focus attention on the monitoring and management of our water resources, aiming to provide a multidisciplinary overview of aquatic ecosystems and resource management. Abstracts should be submitted by 30 June 1995. Enquiries and registration forms from Ms Lesley Stephenson, Conference Secretary, Ph: +27-011-716-5091, Fax: +27-011-339-7835, Email: stephenson@egoli.min.wits.ac.za.

- **WISA 96** (Water Institute of South Africa), 13 to 20 May 1996, Feather Market Centre, Port Elizabeth, South Africa. Information from: Conference Planners, PO Box 82, Irene, 1975 South Africa. Phone: Pretoria (012) 63-1681 or Fax (012) 63-1680.

Sálim Ali Centenary Seminar on Conservation of Avifauna of Wetlands and Grasslands (Bombay Natural History Society), 12 to 15 February 1996, Indira Gandhi Institute for Development Research, Bombay, India. Information from: The Organizing Secretary, Sálim Ali Centenary Seminar, Bombay Natural History Society, Hornbill House, Dr. Sálim Ali Chowk, Shaheed Bhagat Singh Road, Bombay 400 023, India. Phone: +91-22-284 3421 (284 3829, 282 1817, 282 1811, 282 6844, 282 6856). Fax: +91-22-283 7615.

- **Ecological Summer Summit '96**, 19 to 23 August 1996, Copenhagen, Denmark. The Summit incorporates the 10th International Conference on Ecological Modelling, the Intternational Conference on Ecological Engineering, the 2nd International Symposium on Ecosystem Healtth and the European Meeting on Ecological Economics. Further information from: Gill Spear, ECO-Summit '96 Secretariat, Elsevier Science Ltd., Conference Department, The Boulevard, Langford Lane, Kidlington, Oxford OX5 1GB, UK. Phone: +44 1865 843643. Fax: +44 1865 843958. Email: g.spear@elsevier.co.uk. Web-server INFO accessible at: htttp://info.dfh.dk/ECOSUM96

- **North American Benthological Society**, 3-7 June 1996, Kalispell, Montana, USA.

- **Workshop on Aquatic Systems Studies**, June 1996, Kananaskis Field Station, Alberta USA.. A three day workshop to follow the NABS meeting. Further information from: Roger Green (rgreen@julian.uwo.ca) or Jan Ciborowski (cibor@server.uwindsor.ca)

- **River Restoration '96** - International Conference on Restoration and Management of Lowland River Systems, 8-12 September 1996, Silkeborg, Denmark. The four-day scientific programme will cover all aspects of restoration and management of lowland river and watershed ecosystems. Further information from: Hans Ole Hansen and Brian Kronvang, European Centre for River Restoration, Department of Freshwater Ecology, National Environmental Research Institute, Ministry of Environment and Energy, PO Box 314 Velsøvej 25, DK-8600 Silkeborg, Denmark. Ph: +45 89 201 400, Fax: +45 89 201 414, email: fvhoh@dmu.dk or fvbk@dmu.dk

OVERSEAS 1997

- **Multivariate Statistics - Complex Answers to Simple Questions?** Two day meeting December/ January 1997 under the banner of SETAC (Society of Environmental Toxicologists and Chemists) for those interested in ecotoxicology. There will be presentations of multivariate analysis of surveys, experiments and monitoring studies including a review and demonstration of current software. Contact: Dr Tim Kedwards, ZENECA Agrochemicals, Ecology and Soil Science, Jealott's Hill Research Station, Bracknell, UK RG42 6ET. Ph: 44 (0) 1344 414107, Fax: 44 (0) 1344 414124 Email: tim.kedwards@gbjha.ZENCA.com

BOOK REVIEW

Eutrophic shallow estuaries and lagoons

Edited by Arthur J. McComb (240 p)

Polluted brackish water can be so refreshing! This book presents a refreshingly diverse geographic mix of estuaries (and cultures living within catchments). And it is refreshing also to be asked by the editor of this limnological bulletin to review a book about estuaries, which rather than being included in both limnology *and* marine ecology courses in Australian universities tend to be taught about in neither.

A brief introduction explains that the phrase "shallow estuaries and lagoons" limits the book to "bar-built" estuaries, having very limited exchange with the sea. I kept in mind Prof McComb's interesting points about why nutrients might limit production in pristine estuaries. The body of the book is in two parts. First, several chapters review eutrophic estuaries on a case study basis. This is a very valuable collection of experiences in studying eutrophication and attempting to manage human use of estuaries. I found the geographic mix of estuaries interesting enough to mark on a world map. There is a good mix from both hemispheres, and from Australia, Asia and Europe. Nothing from the Americas, however, leaving room for an explanation: which eutrophic shallow estuaries were excluded, and what bias might this introduce?

Each of these chapters tells a story about extreme land-use change in a catchment, increasing nutrient enrichment of the estuary, and increased plant growth. Estuaries covered are: the Peel-Harvey inlet in WA, doyen of Australian eutrophic estuaries (the text was written prior to the Dawesville channel being cut to sea); Tuggerah Lakes, NSW; two estuaries in the South China Sea; the Venice lagoon; two estuaries from the Netherlands, and one from South Africa. The most irretrievably polluted is Tolo Harbour in Hong Kong, the least convincing case of eutrophication (happily) is in Tuggerah Lakes. The European estuaries are set apart by their centuries of recorded history of land-use. All chapters make an excellent job of gathering published and unpublished literature. Not everyone will need nor want to read all of these chapters, but anyone with an interest in any one of the estuaries (read catchments) will find them invaluable.

The second part of the book consists of five highly informative chapters reviewing general aspects mentioned throughout earlier chapters. They use examples well and do not aim to be comprehensive. Topics are: water exchange with the sea; changes in plant groups upon nutrient enrichment; effects of eutrophication on fisheries; role of sediments; and sustainable economics of rehabilitation. This is the part that really makes the book such informative reading. The importance of sediment/water interactions in these shallow estuaries is emphasised. Many of the examples are from WA, and that is probably fair given that West Australians began fixing eutrophic

estuaries (but not polluting them) a decade ahead of other states. The fisheries chapter makes a bold and thorough comparison of three estuaries with different degrees of eutrophication; I found this useful but would like to see more estuaries included in the analysis, given that "nineteen...estuaries in temperate Western Australia are currently fished commercially."

Missing from the book (though it is mentioned in the Introduction!) is a summary chapter, an omission that will make readers work hard to deduce the key points. The work would have finished more strongly with a synthesis by the editor.

Figures are all clear and include some informative, formerly unpublished graphs. Text by different authors has been standardised, although a few problems with language (Ch 7) and spelling (Ch 8) made it to print.

What does this book do for Australian limnologists? Whereas there are solid data about rivers and streams from several areas of Australia, knowledge of Australian estuaries, and especially about eutrophication, comes from few places (mainly southwest WA). The book puts Australian estuarine ecology in a world context, and shows the way forward. This is timely, as work begins soon on an Australia-wide project developing macrobenthic invertebrate community sampling as a tool for assessing pollution status of estuaries (ESTPACS, out of RIVPACS). Eutrophication has been recognised as *the* problem of Australian estuaries.

The book takes a novel approach, brings together hitherto scattered information and ideas, and will be widely cited. Read it if you are interested in eutrophication or estuaries.

Rod Connolly
Faculty of Environmental Sciences, Griffith University, Qld.

ASL VOLUNTEERS

The following people have volunteered to speak as experts on behalf of the ASL. If you wish to be included on the list contact:

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Phone: 61-3 284 0218
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Prof. A.Arthington	in-stream flows, ecology of exotic fishes,conservation of rare fishes	
Dr P.Boon	bacteriological issues, wetlands	03-3652214
Dr A.Boulton	intermittent streams, hyporheic zones, Flinders Ranges streams	067-733760
Dr M.Brock	temporary wetlands, aquatic plants	067-732578
Dr S.Bunn	stream ecology, ecology of riparian zones, biomonitoring	07-8757407
Dr G.Closs	ecology and conservation of freshwater fish, upper Murray River	
Dr Tim Entwisle	taxonomy and ecology of freshwater macroalgae	03-6552313
Dr M.Finlayson	wetlands, Ramsar convention	
Dr T.Grant	platypus biology	
K.Hortle	impact of mining, impact of development in SE Asia and PNG on rivers	03-8742597
Dr P.Horwitz	conservation of freshwater invertebrates	09-4055558
Dr P.Humphries	fish ecology, in-stream flows	060-431002
Dr J.John	blue-green algal blooms in WA, artificial wetlands	
Dr P.S.Lake	stream ecology, conservation of freshwater biota	03-9055653.
Prof. J.Laybourn-Parry	plankton microbial ecology, carbon cycling in lakes, Antarctic freshwater systems	03-4792278
Dr R.Pearson	tropical freshwater ecology	077-814262
J.Puckridge	ecology of arid zone rivers, ecology of freshwater fish	08-3034455
Dr N.Rea	hydrology of wetlands, aquatic plants, constructed wetlands	02-5514425
Dr L.Townley	groundwater - surface water interactions	09-3870329
A/Prof K.F.Walker	Murray - Darling basin rivers	08-3035595
Prof. W.D.Williams	salt lakes	08-3034455

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Please send details (or copies) of books, chapters, articles, periodicals, monographs, reports, newsletters, videos and CDÆs to Russ Shiel, MDFRC, PO Box 921, Albury, NSW 2640. Go on, do it...see your name in print..

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